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The Lampyrid Genus *Stenocladius* (Coleoptera, Lampyridae) from the Okinawa Islands, Middle Ryukyus, Southwest Japan, with Descriptions of Two New Local Populations

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Abstract Four populations of the lampyrid genus *Stenocladius* distributed in the Okinawa Islands, the middle Ryukyus, are reported and described. Two new local populations from Iheya-jima and Tokashiki-jima Islands are described and illustrated, respectively as new subspecies of *S. azumai* NAKANE, 1981, named from Okinawa-jima Is.: *S. a. iheyanus* and *S. a. keramensis*. External morphology of larviform adult female of *S. flavipennis* KAWASHIMA, 1999, from Kume-jima Island is also described and illustrated for the first time.

Introduction

In Japan, four species of the lampyrid genus *Stenocladius* were recorded from the Ryukyu Islands (KAWASHIMA *et al.*, 2003). Since then, several small populations of fireflies of this genus have been newly discovered from several small islands of the Okinawa Group, the middle Ryukyus (SATÔ & KAWASHIMA, 2003). In this paper, we will describe and illustrate two new populations from small islands lying at the western side of Okinawa-jima Island as the subspecies of *S. azumai* NAKANE, 1981. In addition, we will also describe and illustrate for the first time the larviform adult female of *S. flavipennis* KAWASHIMA, 1999, from Kume-jima Island.

Materials and Methods

All the specimens used in this paper were collected by naked eyes in both the day- and nighttimes. The specimens used in the present study are described under the heading "*Type series*" and/or other headings following the descriptions of each taxon. For dissection, dried specimens were relaxed in hot water, then male genitalia were removed from the body, mounted on slide glasses with glycerol, observed through optical microscope (OLYMPUS CH-2, max. magnification ×1,000), and sketched with the aid of an attached drawing tube. External characters in adult male, adult female and larvae were observed and sketched with a stereoscopic microscope (OLYMPUS SZH10, max. magnification ×140) equipped with a drawing tube. The abbreviations used herein are as follows: BL – length of body, from anterior margin of frons to elytral apices; HW – maximum width of head, including eyes; PL – length of pronotum, along the mid-line; PW – maximum width of pronotum; EL – maximum length of elytra; EW – maximum width of elytra; EHW – humeral width of elytra; HTL – length of hind tibiae; HUM – The Hokkaido University Museum, Sapporo; KNCC – The Kumejima Natural & Cultural Center; FS – Fumiyasu SATOU; HS – Hirobumi SUZUKI; IK – Itsuro KAWASHIMA; YG – Yoshimasa GOTO.

Descriptions

Common external structure of whole body including appendages in adult males are given in the general diagnoses of the Japanese species in KAWASHIMA (1999, pp. 142–143.).

Stenocladius azumai azumai NAKANE, 1981

[Japanese name: Tateobi-hige-botaru]

(Fig. 13)

Additional specimens examined. [Okinawa-jima Is., Okinawa Isls.] 1♀, Mt. Nekumachiji-dake, Ôgimi-son, XII–2000, collector unknown & IK bred; 20♂♂, 10 larvae, Yona, Kunigami-son, 3–XII–2001, HS & IK leg.; 1♀, 1 larva, same locality as above, 4–XII–2001, HS, IK & YG leg.; 5♂♂, 1♀, ditto, 5–XII–2001, HS, IK & YG leg.; 5 larvae, Sueyoshi-kôen Park, Naha-shi, 13–V–2004, IK leg.

Male. *Coloration.* Head capsule dark to blackish brown, more or less tinged with yellowish coloration in frontal area. Antennae frosted blackish, but only scape shiny, paler than the other segments, brown to dark brown. Eyes blackish with violet tint. Labrum yellowish brown. Mandibles shiny and dark brown, paler towards the bases. Both maxillary and labial palpi brown to pale blackish brown. Pronotum almost unicolorous, yellowish brown, sometimes tinged with brownish on the disc and anterior and basal margins. Scutellum dark to blackish brown. Elytra grayish to dark brown, becoming darker towards the bases, more or less paler in marginal areas including suture though devoid of clear boundaries; paler areas along sutural margins variable individually. Ventral surface of meso- and metathoraces almost yellowish, only epimeron of metathorax tinged with brownish. Femora almost yellowish, sometimes tinged with brownish in anterior sides. Tibiae dark brown. Tarsi dark brown, paler towards the apical tarsomeres. Claws yellowish brown, darker towards the apices. Body closely and constantly covered with pale subrecumbent pubescence; antennae, maxillary and labial palpi, tibiae and tarsi more densely covered with dark brownish minute setae.

External morphology. Relative length of each antennal segment in a specimen as follows:— 11 : 4.5 : 13.5 : 18.5 : 18.5 : 17 : 16.5 : 14.5 : 14 : 13 : 30; pectina fairly short, about twice to 3.2 times as long as the stem itself, almost twice in 3rd, about 2.3 times in 4th, 2.4 times in 5th, 2.8 times in 6th, three times in 7th and 9th, 3.2 times in 8th, 2.9 times in 10th. PW/PL 1.29–1.44 (mean: 1.38); PW/HW 1.38–1.57 (mean: 1.47); PL/PW 0.64–0.73 (mean: 0.68); PW/HHW 0.80–0.89 (mean: 0.85); EL/PL 4.58–5.14 (mean: 4.87); EL/EW 2.29–2.67 (mean: 2.44); EW/PW 1.31–1.45 (mean: 1.36). Male genitalia as shown in KAWASHIMA (1999, figs. 23–24); aedeagus wide; both sides feebly and gradually convergent towards the rounded apex; each paramere nearly straight, feebly divergent towards the apices, which are sometimes well bent inwards.

Measurement in mm. BL: 5.80–7.90; HW: 1.10–1.40; PL: 1.00–1.40; PW: 1.45–2.00; EL: 4.85–6.60; EHW: 1.70–2.35; EW: 1.95–2.75; HTL: 1.50–2.00.

Female. Wingless larviform (OHBA *et al.*, 1997).

Color and marking pattern mainly in full grown larva. The color and marking patterns of tergites continuous from thoraces to abdomen were described in OHBA *et al.* (1996). They are redescribed herewith (Fig. 13) as follows: Ground color fresh red; pronotum usually devoid of blackish markings; mesonotum to 6th abdominal tergite each with a pair of triangular blackish markings on anterior corners, usually widely separated from each other; 7th to 9th abdominal tergites each with a pair of moderately vague blackish markings at the sides of anterior margin, which are sometimes almost vanished in the 7th.

Distribution. Okinawa-jima Is., Okinawa Isls.

Notes. The external morphology of adult male was twice described (NAKANE, 1981, 1997), while the external characters of larval stage and the larviform adult female were reported in detail by OHBA *et al.* (1996, 1997).

This nominotypical subspecies is very common in the northern area of Okinawa-jima Island, so-called "Yambaru", which means the terrace-like hills, while it is much less abundant in the southern part of the island. The adult male has a pair of luminescent organs at the sides of the 7th abdominal segment, while the larviform adult female weakly glows in almost whole body. However, other biological information is still very scanty.

Stenocladius azumai iheyanus KAWASHIMA et F. SATOU, subsp. nov.

(Figs. 1, 3, 5, 7–8, 14)

Type series. [Iheya-jima Is., Okinawa Isls.] Holotype: ♂, Mt. Koshi-dake, 10–XII–2003, FS leg. Paratypes: 11♂♂, same data as for the holotype; 10♂♂ (incl. 4♂♂ preserved in 90% ethyl alcohol), ditto, 10–XII–2001, FS leg.

Type depository. The holotype (Fig. 1) is deposited in the insect collection of HUM. The paratypes are distributed to the insect collections of HUM, KNCC and IK.

Etymology. The subspecific name is derived from the type locality, Iheya-jima

Island.

Additional specimens examined (*larvae*). 2 larvae, same locality as for the holotype, 3–XII–2001, IK leg.; 1 larva, Tana (=Dana, in old times), Iheya-jima Is., Okinawa Isls., 11–XII–2001, FS leg.; 7 larvae, ditto, 10–XII–2003, FS leg.

Male. *Coloration.* Body color closely similar to that of nominotypical *S. a. azumai* as a whole, but often darker than in the latter.

Distinguished from the nominotypical subspecies by a combination of the following points: 1) maxillary and labial palpi darker, blackish brown; 2) elytra basically the same, grayish to dark brown, becoming also darker towards the bases, but darker areas are more enlarged than in nominotypical *azumai*; 3) tibiae darker, blackish brown.

External morphology. Differences from the nominotypical subspecies, *S. a azumai*, are mainly described below. Relative length of each antennal segment in a male specimen (Fig. 5) is as follows:— 11 : 5.5 : 11.5 : 18 : 17 : 17 : 16.5 : 16 : 15.5 : 14.5 : 50.0; pectina longer than in *S. a. azumai*, about 3.6 to 4.9 times as long as the stem, almost 3.8 times in 3rd, 3.6 times in 4th and 10th, 4.1 times in 5th and 6th, 4.8 times in 7th, 4.5 times in 8th and 4.3 times in 9th. PW/PL 1.33–1.76 (mean: 1.49); PW/HW 1.25–1.44 (mean: 1.32); PL/PW 0.57–0.71 (mean: 0.68); PW/HHW 0.80–0.89 (mean: 0.84); EL/PL 4.30–5.62 (mean: 4.93); EL/EW 2.41–2.96 (mean: 2.27); EW/PW 1.10–1.44 (mean: 1.29). Male genitalia as shown in Figs. 7–8; aedeagus wide but moderately short; sides gradually but clearly convergent towards the rounded apex; each paramere nearly straight and slender, hardly open or feebly open towards the distal parts, with the apices not so much bent inwards (relatively well bent inwards in nominotypical *azumai*).

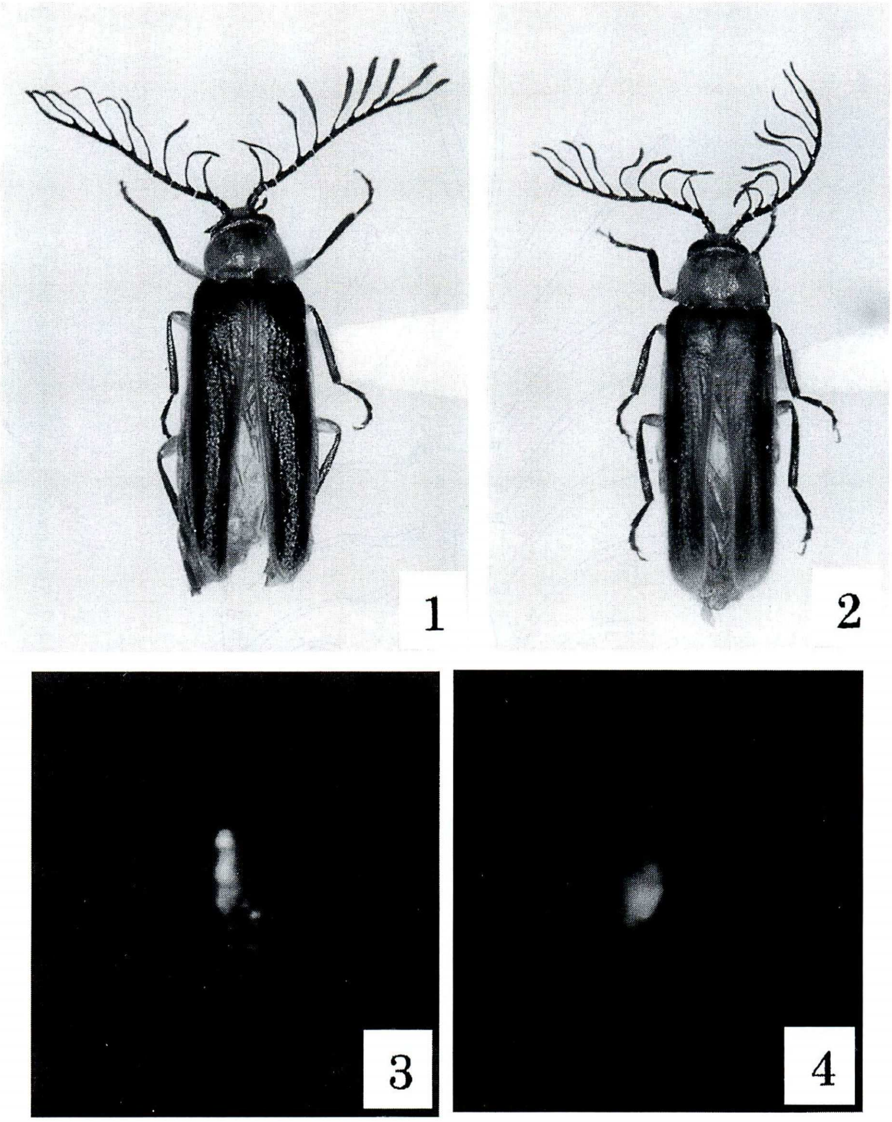
Measurement in mm. BL: 7.90 (in the holotype) (range 6.80–8.60); HW: 1.45 (1.35–1.60); PL: 1.30 (1.05–1.55); PW: 1.90 (1.75–2.30); EL: 8.30 (5.90–7.70); EHW: 2.30 (2.10–2.75); EW: 2.45 (2.20–2.80); HTL: 1.90 (1.60–2.10).

Female. Unknown (probably wingless larviform).

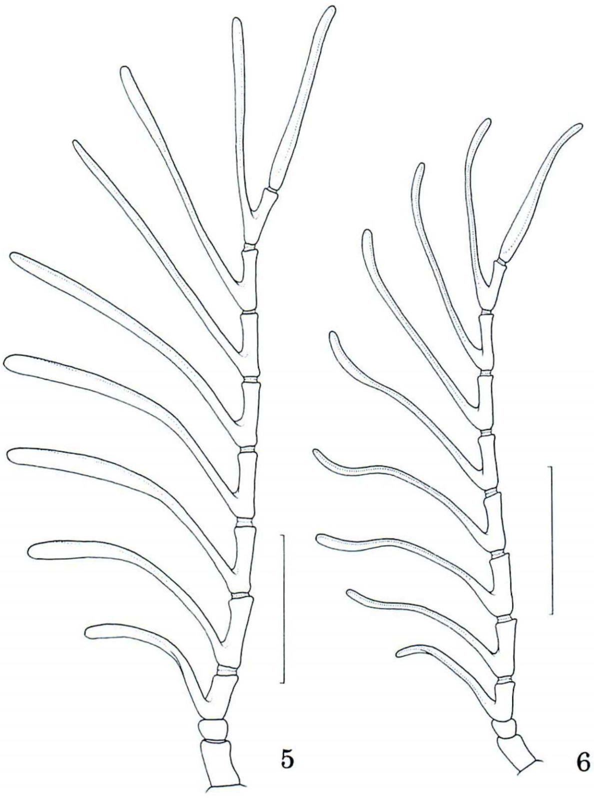
Color and marking pattern mainly in fully grown larva. Color and marking pattern of tergites continuous from thoraces to abdomen (Fig. 14):— Ground color fresh red; mesonotum to 8th abdominal tergite each with a pair of blackish and triangular markings on anterior corners, usually widely separated from each other; hind margins of pronotum to 9th abdominal tergite constantly margined with blackish markings, which become gradually wider towards the sides, sometimes connected with the markings on anterior corners in lateral marginal areas.

Distribution. Iheya-jima Is., the northern tip of the Okinawa Group of the Ryukyu Islands.

Notes. This new subspecies resembles the nominotypical subspecies of *S. azumai* in body coloration, general appearance, etc., but can be discriminated from the other subspecies inclusive of *S. a. azumai* by a combination of the following points: 1) body coloration of adult male frequently darker, especially increasing of darker areas of elytra; 2) relative lengths of pectinae in 3rd to 10th antennal (1st to 8th flagellar) segments much longer; 3) aedeagus of male genitalia shorter; parameres almost



Figs. 1–4. Holotypes of *Stenocladius azumai* subspp. —— 1, *S. azumai iheyanus* KAWASHIMA et F. SATOU, subsp. nov., from Iheya-jima Is.; 2, *S. azumai keramenisis* KAWASHIMA et F. SATOU, subsp. nov., from Tokashiki-jima Is., Kerama Group. —— 3–4. Luminescence of *Stenocladius azumai* subspp.; 3, *S. azumai iheyanus* KAWASHIMA et F. SATOU, subsp. nov., from Iheya-jima Is.; 4, *S. azumai keramensis* KAWASHIMA et F. SATOU, subsp. nov., from Tokashiki-jima Is., Kerama Group.



Figs. 5–6. Right male antennae of *Stenocladius azumai* subspp. —— 5, *S. azumai iheyanus* KAWASHIMA et F. SATOU, subsp. nov., from Iheya-jima Is.; 6, *S. azumai keramensis* KAWASHIMA et F. SATOU, subsp. nov., from Tokashiki-jima Is., Kerama Group. Scale: 1.0 mm.

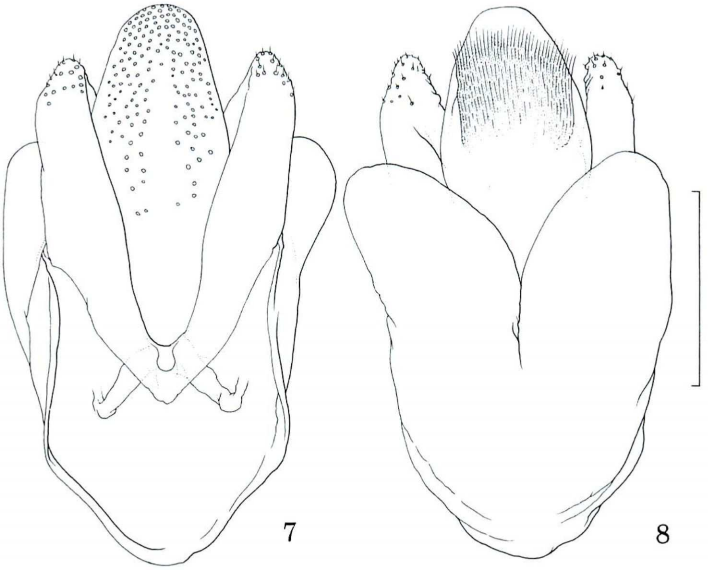
straight, with the apices hardly bent inwards; 4) the difference of color and marking patterns of tergites continuous from thoraces to abdomen in larval stage.

This new subspecies seems fairly common on Iheya-jima Is., but the period of adult appearance may be much limited to early weeks of the winter season. The senior author was unable to see it in December 2001 on Noho-jima Island, which is located off the southern tip of Iheya-jima Is. The adult male has a pair of luminescent organs at the sides of the 7th abdominal segment (Fig. 3), but other biological informations are almost completely unavailable.

Stenocladius azumai keramensis KAWASHIMA et F. SATOU, subsp. nov.

(Figs. 2, 4, 6, 9–10, 12)

Type series. [Kerama Group, Okinawa Isls.] Holotype: ♂, Tokashiki-jima Is. (upper course of the Tokashiki-gawa Riv.), 8 – XII – 2003, FS leg. Paratypes: 1 ♂ (pre-



Figs. 7–8. Male genitalia of *S. azumai iheyanus* KAWASHIMA et F. SATOU, subsp. nov.; dorsal view (7), ventral view (8). Scale: 0.25 mm.

served in 90% ethyl alcohol), same locality as for the holotype, 12 – XII – 2001, FS leg.; 4♂♂, same data as for the holotype; 6♂♂, same locality as for the holotype, 15 – XII – 2001, FS leg.

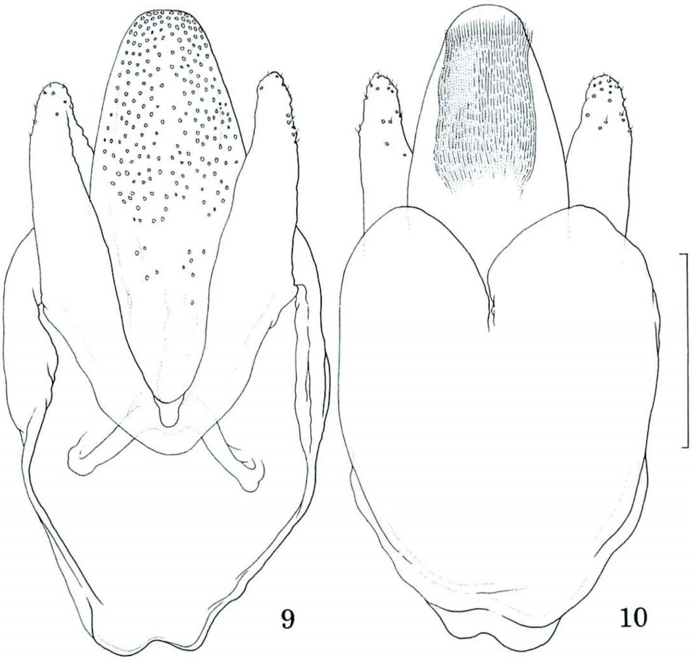
Type depository. The holotype (Fig. 2) is deposited in the insect collection of HUM. The paratypes are distributed to the insect collections of HUM, KNCC and IK.

Etymology. The subspecific name is derived from the Kerama Group, including the type locality, Tokashiki-jima Is.

Additional specimens examined (*larvae*). 8 larvae, same locality as for the holotype, 8 – XII – 2003, FS leg.

Male. *Coloration.* Body color more or less dull, frequently paler than those of nominotypical *S. a. azumai* and *S. a. iheyanus* subsp. nov.

Distinguished from the nominotypical subspecies, *S. a. azumai* by the following points: 1) antennal scape darker, tinged with blackish; 2) maxillary and labial palpus weakly darker, blackish brown; 3) pronotum almost unicolorous, but the ground color is basically dull yellowish; 4) elytra often paler than those of nominotypical *azumai* and *azumai iheyanus* subsp. nov., pale to yellowish brown, constantly becoming paler towards the bases; paler areas extending along elytral margins including suture and fairly enlarged; paler area of inner side along sutural margin of each elytron dilated towards the bases; areas around scutellum spaciously unicolorous yellowish brown, making remarkable contrast to the color of scutellum; 4) tibiae darker, blackish brown to black.



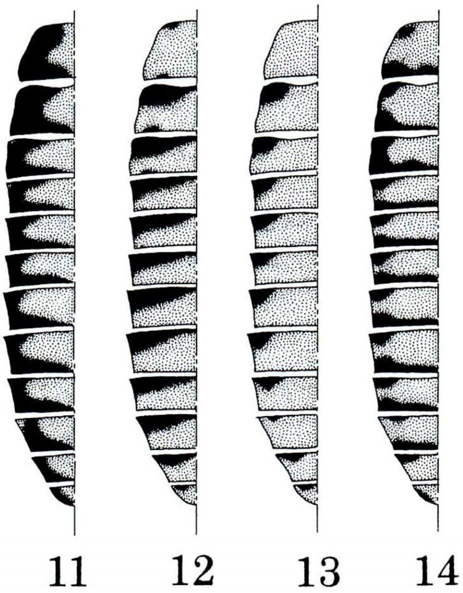
Figs. 9–10. Male genitalia of *S. azumai keramenisis* KAWASHIMA et F. SATOU, subsp. nov.; dorsal view (9), ventral view (10). Scale: 0.25 mm.

External morphology. Differences from the nominotypical subspecies, *S. a. azumai* are mainly described below. Relative length of each antennal segment in a male specimen (Fig. 6) as follows:— 8.5 : 4.5 : 10 : 14 : 15 : 14 : 14 : 14 : 14.5 : 12 : 41; pectina longer than in *S. a. azumai*, but shorter than in *S. a. iheyanus* subsp. nov, about 3.5 to 4.3 times as long as the stem, 3.5 times in 3rd, 3.57 times in 4th, 3.8 times in 5th and 9th, 4.0 times in 6th, 4.3 times in 7th, 4.1 times in 8th and 3.9 times in 10th. PW/PL 1.42–1.50 (mean: 1.46); PW/HW 1.28–1.37 (mean: 1.32); PL/PW 0.67–0.70 (mean: 0.69); PW/EHW 0.76–0.82 (mean: 0.80): EL/PL 4.62–5.36 (mean: 5.02); EL/EW 2.59–2.89 (mean: 2.74); EW/PW 1.19–1.32 (mean: 1.26). Male genitalia as shown in Figs. 9–10; sides of aedeagus gradually but clearly convergent towards the rounded apex; parameres slender and nearly straight, hardly or feebly dilated towards the apices, which are hardly bent inwards (well bent inwards in *S. a. azumai*).

Measurement in mm. BL 7.60 (in the holotype) (range 7.60–9.50); HW 1.30 (1.30–1.75); PL 1.30 (1.30–1.60); PW 1.85 (1.85–2.30); EW 2.30 (2.30–2.95); EHW 2.20 (2.20–2.90); EL 6.00 (6.00–8.00); HTL 1.80 (1.80–2.30).

Female. Unknown (probably wingless larviform).

Color and marking pattern mainly in fully grown larva. Color and marking patterns in tergites of thorax and abdomen were described in OHBA *et al.* (1996). Since the description was not perfect due to discolored condition of specimens, a redescription



Figs. 11–14. Diagrams of color-marking patterns in larval tergites of the genus *Stenocladius* from the Okinawa Isls.; *S. flavipennis* KAWASHIMA, from Kume-jima Is. (11); *S. azumai keramensis* KAWASHIMA et F. SATOU, subsp. nov., from Tokashiki-jima Is., Kerama Group (12); *S. azumai azumai* NAKANE, from Okinawa-jima Is. (13); *S. azumai iheyanus* KAWASHIMA et F. SATOU, subsp. nov., from Iheya-jima Is. (14), dorsal view, left halves.

based on fresh specimens is given below (Fig. 12):— Ground color fresh red; mesonotum to 9th abdominal tergite each with a pair of blackish and transverse triangular markings on anterior corners, which are nearly separated from each other, sometimes barely attached at the center.

Distribution. Tokashiki-jima Is., Kerama Group, Okinawa Isls.

Notes. This new subspecies is similar to the nominotypical subspecies, *S. a. azumai* from Okinawa-jima Island, but it can be distinguished from the other taxa including *S. a. azumai* by a combination of the following points: 1) body coloration of adult male paler but generally dull; darker areas of elytra remarkably decreasing; 2) relative lengths of pectinae of 3rd to 10th antennal (1st to 8th flagellar) segments relatively long; 3) aedeagus of male genitalia more slender; the apices of parameres hardly bent inwards; 4) the difference in color and marking patterns of tergites continuous from thoraces to abdomen in larval stage. Also similar to the preceding new subspecies, *S. azumai iheyanus* from Iheya-jima Is., but discriminated from it by the following points: 1) body color clearly paler; darker areas of elytra more decreasing; 2) antennal pectinae moderately shorter; 3) aedeagus of male genitalia longer; parameres more slender; 4) the difference in color and marking patterns of tergites continuous from thoraces to abdomen in larval stage.

This new subspecies seems relatively rare even in larger island of the Kerama Group, Tokashiki-jima Is. In 1995, the senior author never came across it on Zamami-jima Is., belonging to the same group. The adult male has a pair of luminescent organs at the sides of the 7th abdominal segment (Fig. 4); other biological information is almost completely unknown.

Stenocladius flavipennis KAWASHIMA, 1999

[Japanese name: Shibuiro-hige-botaru]

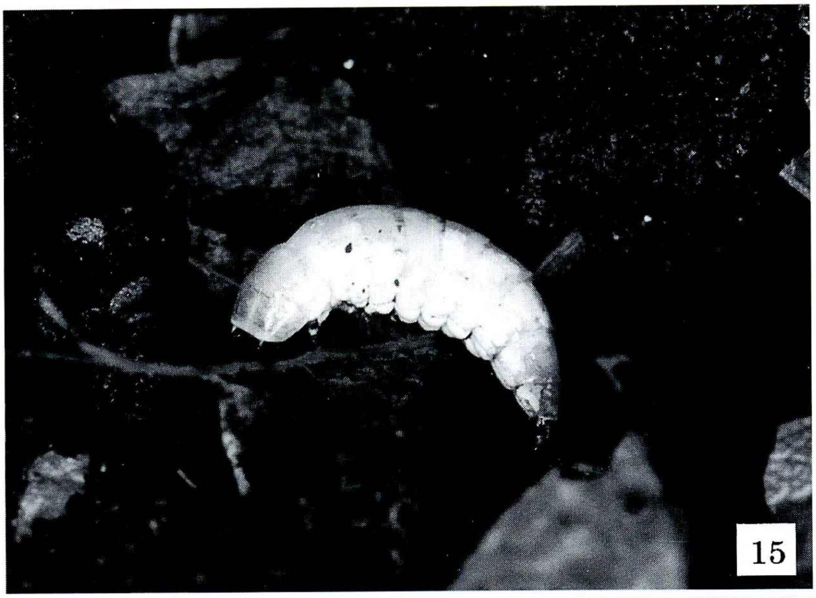
(Figs. 11, 15–24)

Additional specimens examined. [Kume-jima Is., Okinawa Isls.] 27♂♂, Mt. Uégusuku-dake, 2–XII–2001, IK leg.; 4♂♂, Kumejima-chô, 27–XI–2003, FS leg.; 1♀, same locality as above, 24–XI–2003 (emergence), FS leg. (larva) and bred; 2♀♀, ditto, 6~8–XII–2003, FS leg.; 6 larvae, Mt. Uégusuku-dake, 11–V–2004, IK leg.

Female. Body almost completely larviform and wingless as in the females of the other species from Japan (OHBA *et al.*, 1997; KAWASHIMA, 1999).

Coloration. Head capsule weakly shiny, dark reddish brown. Lateral ocelli (stemmata) blackish. Mouth parts yellowish brown, with the exception of mandibles which are dark to blackish brown, becoming paler towards the bases. Antennae yellowish brown, with basal articulating membrane milky white to pale yellow. Thorax and abdomen constantly pale yellow to milky white with intersegmental membraneous areas translucently whitish, without any distinct markings, or very feebly pigmented to pale brown, ventral surface paler than the dorsal, almost completely milky whitish. Legs including claws yellowish brown.

External morphology. Body middle-sized among adult females of the Japanese species. Much swollen in anterior to middle segments of abdomen, showing a spindle-shape as a whole (Fig. 15). Head capsule (Figs. 17–18) moderately swollen, but clearly depressed dorso-ventrally, constantly covered with short setae and/or spines except for anterior marginal area (nasal area), and with moderately long spines on anterior margin transversely. Maxillae (Figs. 18–19) with one-segmented galea and four-segmented maxillary palpus; galea moderately short and with pointed apices; palpi gradually narrowed towards the apical segment, which is minutely rounded at the apex. Labium (Figs. 18, 20) relatively small; sides of prementum almost parallel or feebly divergent towards the apex; labial palpus two-segmented, clearly narrowed towards the apices, 2nd segment with sharply pointed apex. Basal parts of maxillae and labium fused with each other, shape of cardo and basal part of mentum not clearly recognized (Fig. 18). Mandibles (Fig. 17) moderately small and constantly incurved with rounded apices. Lateral ocelli (stemmata, Fig. 18) minute, recognized at the lateral sides of head capsule just before the basal portions of antennae. Antennae (Figs. 17–18, 21) short and moderately slender; scape the longest, gradually tapered towards the apices; pedicel almost cylindrical with rounded apex, with a transparent sense organ; flagellum minute, with four to five longer setae; relative length of each segment from scape in a speci-



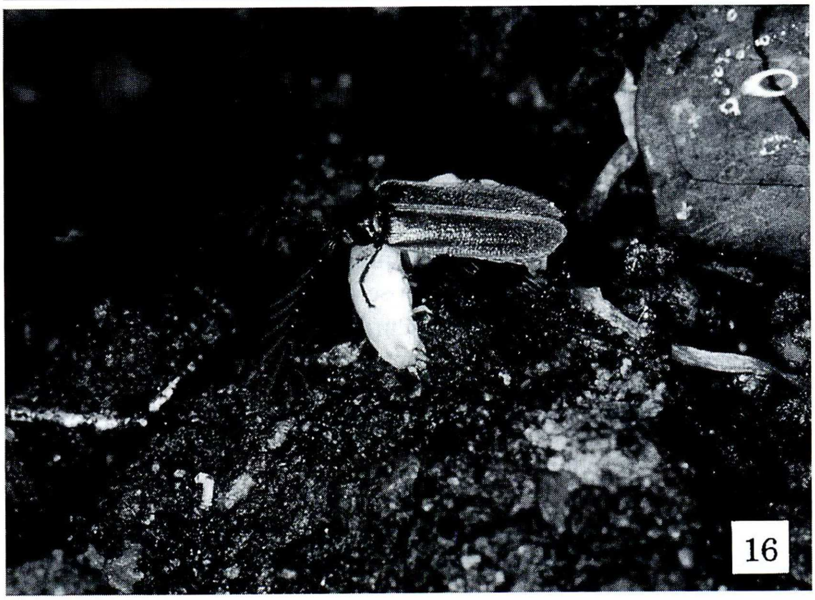
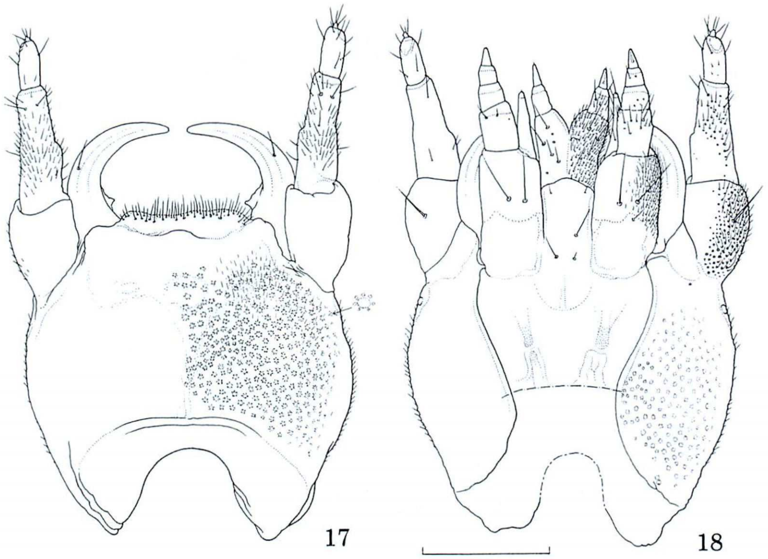


Fig. 15–16. —— 15. Adult female of *Stenocladius flavipennis* KAWASHIMA, from Kume-jima Is. —— 16. A male of *Stenocladius flavipennis* KAWASHIMA, mounting a smaller female.



Figs. 17–18. Head structure of adult female of *Stenocladius flavipennis* KAWASHIMA, from Kume-jima Is.; dorsal view (17), ventral view (18). Scale: 0.5 mm.

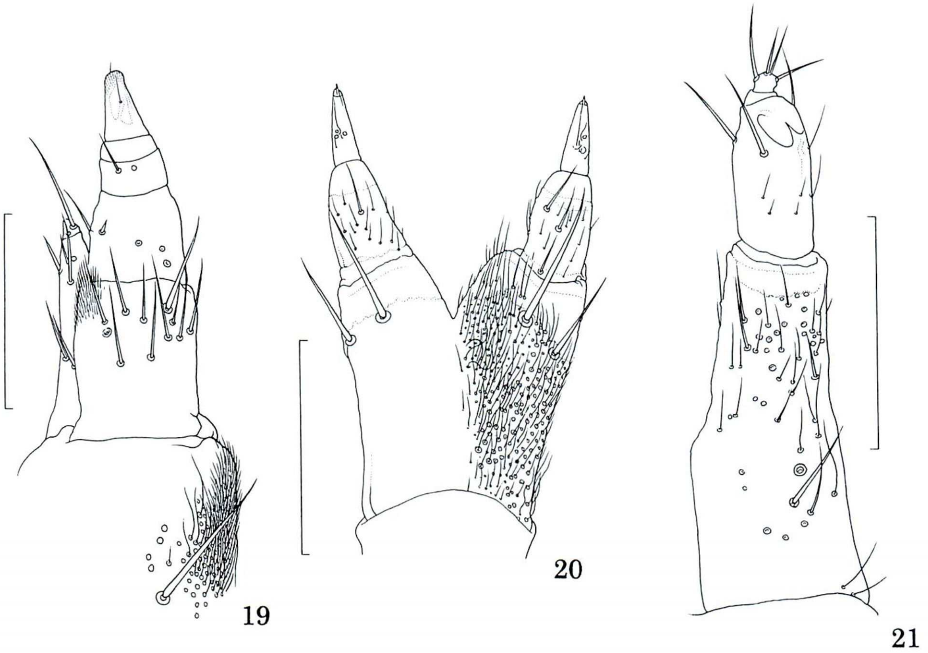
men as follows:— 86 : 41 : 5. Legs as shown in Fig. 24; trochanters large, obliquely attached to femora; femora clearly longer than trochanters; upper and lower margins almost parallel in all legs; tibiae clearly shorter than femora, as long as trochanters, almost cylindrical; 1st segment of tarsi very short, about one-fourth the tibiae; 2nd one long and clavate, about three times as long as 1st; claws simple but complete, dilated at the bases. A pair of shallow and very feeble projections (Fig. 23) on the posterior margin of 8th ventrite; hind marginal area with setae transversely. Cerci (Figs. 22–23) arcuate outwards in basal third, apical two-thirds straightly elongated posteriad; stylus (Figs. 22–23) small and straight with moderately pointed apices; each cercus weakly divergent apicad from each other.

Measurement in mm. BL ca. 11.00–15.00 (in living state).

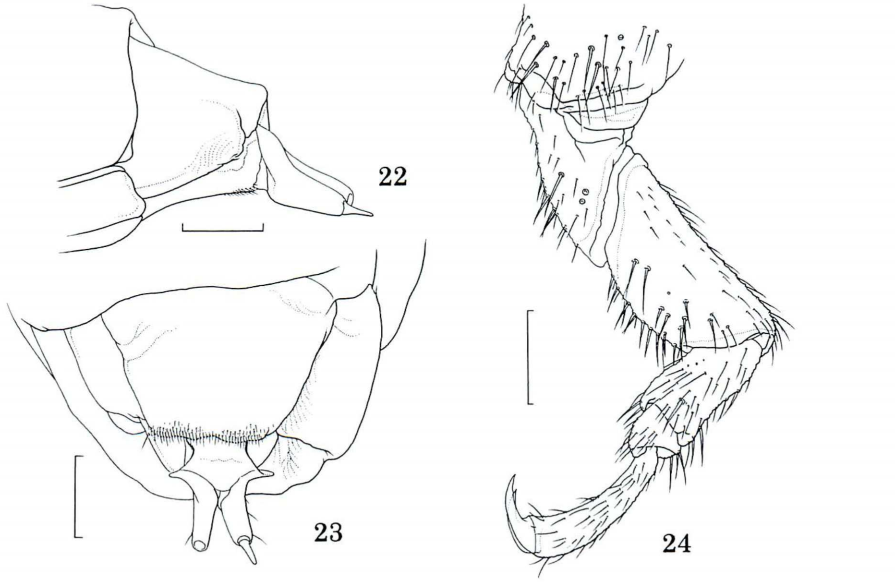
Distribution. Kume-jima Is., west of Okinawa Is.

Notes. External morphology of the adult male was originally described in detail by KAWASHIMA (1999). It is generally larger than the other congeners in Japan, almost constant in both coloration and body size. Larval characters including color and marking patterns (Fig. 11) were described in detail by OHBA *et al.* (1996). However, the adult female has never been described up to the present, since good specimens were not available for study (KAWASHIMA, 1999).

This species is apparently endemic to Kume-jima Island, which is located about 100 km west of Okinawa-jima Island. It is commonly seen from autumn to winter on the island. The adult male has a pair of luminescent organs at the side of the 7th abdominal segment, while the adult female has weak but continuous luminescence on al-



Figs. 19–21. *Stenocladius flavipennis* KAWASHIMA, from Kume-jima Is.; adult female; ventral view; 19, apical part of left maxilla; 20, labium; 21, right antenna. Scale: 0.25 mm.



Figs. 22–24. *Stenocladius flavipennis* KAWASHIMA, from Kume-jima Is., adult female; left lateral view (22), ventral view (23, 24). —— 22–23, Apical segments of abdomen, 24, hindleg. Scale: 0.5 mm (22, 23), 0.25 mm (24).

most whole body.

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要　　約

川島逸郎・佐藤文保：沖縄諸島に産するヒゲボタル属およびその周辺の小島嶼に産する2個体群の記載. —— 日本産ヒゲボタル属 *Stenocladius*の種は，現在までに，琉球列島から少なくとも4種が知られている(KAWASHIMA *et al.*, 2003). 最近，沖縄島を中心とした周辺のいくつかの小島嶼にも，この属の個体群が分布することが確認され，筆者らにより調査が進められてきた(佐藤・川島，2003). その結果，伊平屋島および慶良間諸島の渡嘉敷島については，幼虫・成虫ともに研究材料を集積することができ，ある程度固有の形質を持つ集団であることを確認した. そのため，この論文では上記2個体群の検討を行い，ともに沖縄島産のタテオビヒゲボタル *S. azumai* NAKANE, 1981の亜種として，伊平屋島の個体群に*S. a. iheyanus* subsp. nov., 慶良間列島渡嘉敷島の個体群に*S. a. keramensis* subsp. nov. という名称を与えて記載した. 加えてタテオビヒゲボタル・久米島産シブイロヒゲボタル*S. flavipennis* KAWASHIMA, 1999に関しては，最近までに追加された新しい研究材料と知見を含めて，諸情報を一括して記録・報告した. 後者の種については，これまで正式に報告されてこなかった雌成虫の外部形態を初めて報告・記載した.

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Epuraea kaszabi KIREJTSHUK, a Little-known Nitidulid Beetle Newly Recorded in Japan

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According to the 'MOKUROKU' database of Japanese insects by Kyushu University (TADAUCHI & INOUE, 2000), 161 species of the family Nitidulidae (Coleoptera) have been recorded in the Japanese Archipelago. They include 31 species of the genus *Epuraea*.

Here we record one additional species of this genus, *Epuraea* (*Epuraea*) *kaszabi* KIREJTSHUK, 1992, from Japan. In a series of surveys on flower visitors to a subtropical orchard tree, cherimoya (*Annona cherimola* MILL.: Annonaceae) in Wakayama Prefecture, Central Japan, we found this species alongside other beetles such as *Mimemodes monstrosus* (REITTER) (Rhizophagidae) and *Haptoncus ocularis* (FAIRMAIRE) (Nitidulidae). A list of flower visitors to the cherimoya in Japan is provided elsewhere. The collecting records of the species were as follows.

Specimens examined. 1♂, 1♀, Kokawa Town, Wakayama Pref., Central Japan, 29–V–2001, M. TSUKADA leg.; 1♂, same locality, 13–VI–2001, M. TSUKADA leg.

Voucher specimens are deposited at the Entomology Laboratory, Mie University, though the males are not in a complete condition since their genitalia have been extracted for examination. Alternatively, additional 26 specimens from the Primorsky and Khabarovsky Regions in Russia, including the holotype & 11 paratypes, are available at the Zoological Institute, St. Petersburg. Till now, *E. kaszabi* has been recorded in Russia (KIREJTSHUK, 1992; NIKITSKY *et al.*, 1996). This species is similar to the Japanese nitidulid species *Epuraea argus* REITTER and *Epuraea decolor* REITTER. A key to these species has been provided in KIREJTSHUK (1992) with some illustrations (pp. 153–158).

The collecting site is located at 135°24′E, 34°17′N and the altitude is ca. 100 m above sea-level. It was a plastic greenhouse in which cherimoya trees were in commercial cultivation.